

1396 ;
1397 ; GENERAL USE SUBROUTINES
1398 ;
1399 ; Set colors for special routines
24FF AF 1400 R24FF XOR A
2500 D304 1401 OUT (COL0L),R
2502 D300 1402 OUT (COL0R),R
2504 D309 1403 OUT (HORCB),R
2506+ 3E0F 1404 LD A,0FH
2508 D301 1405 OUT (COL1R),R
250A D302 1406 OUT (COL2R),R
250C D303 1407 OUT (COL3R),R
250E 1408 SVSSUK FILL
250E FF 1409+ RST 39H
250F 1B 1410+ DB FILL+1
2510 0040 1414 DW NORMEM
2512 000F 1415 DW 4016
2514 00 1416 DB 0
2515 C9 1417 RET
1418 ;
2516 1419 R2516 SVSSUK STRDIS
2516 FF 1420+ RST 39H
2517 35 1421+ DB STRDIS+1
2518 04 1425 DB 4
2519 28 1426 DB 40
251A 0C 1427 DB 00001100B
251B 4124 1428 DW T2441 ; 'ENTR 4-DIGIT HEX'
251D C9 1429 RET
1430 ;
251E 1431 R251E SVSSUK STRDIS
251E FF 1432+ RST 39H
251F 35 1433+ DB STRDIS+1
2520 04 1437 DB 4
2521 32 1438 DB 50
2522 0C 1439 DB 00001100B
2523 5124 1440 DW T2451 ; 'READ ADDR'
2525 C9 1441 RET
1442 ;
2526 1443 R2526 SVSSUK STRDIS
2526 FF 1444+ RST 39H
2527 35 1445+ DB STRDIS+1
2528 04 1449 DB 4
2529 28 1450 DB 40
252A 0C 1451 DB 00001100B
252B 6624 1452 DW T2466 ; 'ENTR 2-DIGIT HEX'
252D C9 1453 RET
1454 ;
252E 1455 R252E SVSSUK STRDIS
252E FF 1456+ RST 39H
252F 35 1457+ DB STRDIS+1
2530 04 1461 DB 4
2531 28 1462 DB 40
2532 0C 1463 DB 00001100B
2533 9524 1464 DW T2495 ; 'ENTR 2-DIGIT HEX'
2535 FF 1465 SVSSUK STRDIS
2535 35 1466+ RST 39H
2536 35 1467+ DB STRDIS+1

257E	1537	R257E	SVSSUK	STRDIS		; Display 4 asterisks
257E FF	1538+		RST	39H		
257F 35	1539+		DB	STRDIS+1		
2580 48	1543		DB	72		
2581 46	1544		DB	70		
2582 8C	1545		DB	00001100B		
2583 BB24	1546		DW	T24BB		; *****
2585 210000	1547	R2595	LD	HL,0		
2588 CD5025	1548		CALL	R2550		
258B FE18	1549		CP	24		
259D 283E	1550		JR	Z,R25CD		; "GO" key
258F FE15	1551		CP	21		
2591 28E2	1552		JR	Z,R2575		; "CE" key
2593	1553		XVRELL	DE,72,70		
2593 114846	1554+		LD	DE,70 SHL 8+(72)		
2596 CD3D25	1555		CALL	R253D		
2599 78	1556		LD	R,B		
259A CD0320	1557		CALL	R2003		; Mul A by 16
2590 67	1558		LD	H,R		; First nibble
259E CD5025	1559		CALL	R2550		
25A1 FE15	1560		CP	21		
25A3 2800	1561		JR	Z,R2575		; "CE" key
25A5 CD3D25	1562		CALL	R253D		
25A8 7C	1563		LD	R,H		
25A9 B8	1564		OR	B		
25A8 67	1565		LD	H,R		; Second nibble
25A8 F1	1566		POP	AF		
25AC A7	1567		AND	A		
25AD 2001	1568		JR	NZ,R25B0		
25AF C9	1569		RET			
	1570 ;					
25B0 F5	1571	R25B0	PUSH	AF		
25B1 CD5025	1572		CALL	R2550		
25B4 FE15	1573		CP	21		
25B6 2806	1574		JR	Z,R257E		; "CE" key
25B8 CD3D25	1575		CALL	R253D		
25B8 78	1576		LD	R,B		
25BC CD0320	1577		CALL	R2003		; Mul A by 16
25BF 6F	1578		LD	L,A		
25C0 CD5025	1579		CALL	R2550		
25C3 FE15	1580		CP	21		
25C5 28B7	1581		JR	Z,R257E		; "CE" key
25C7 CD3D25	1582		CALL	R253D		
25CA 7D	1583		LD	R,L		
25CB B8	1584		OR	B		
25CC 6F	1585		LD	L,A		
25CD F1	1586	R25CD	POP	AF		
25CE C9	1587		RET			
	1588 ;					
	1589 ; Fixed delay routine					
25CF 3EFF	1590	R25CF	LD	A,255		
25D1 06FF	1591	R25D1	LD	B,255		
25D3 10FE	1592	R25D3	DJNZ	R25D3		
25D5 3D	1593		DEC	A		
25D6 20F9	1594		JR	NZ,R25D1		
25D8 C9	1595		RET			
	1596 ;					

2631	0C	1663	DB	00001100B	
2632	8824	1664	DW	T2480	; 'WRITE PORT'
2634	AF	1665	XOR	A	
2635	CD7125	1666	CALL	A2571	
2638	E5	1667	PUSH	HL	
2639	7C	1668	LD	A,H	
263A	D3FF	1669	OUT	(DSPLV),R	
263C	CDFC25	1670	CALL	A25CF	
263F	CDFF24	1671	CALL	A24FF	
2642	CD2E25	1672	CALL	A252E	; "ENTR 2-DIGIT BYTE TO WRITE"
2645	AF	1673	XOR	A	
2646	CD7125	1674	CALL	A2571	
2649	C1	1675	POP	BC	
264A	48	1676	LD	C,B	
264B	ED61	1677	R264B	OUT	(C),H
264D	18FC	1678	JR	R264B	
		1679	;		
		1680	; Special Routine 5	Memory Read and Write Routine	
264F	Cdff24	1681	R264F	CALL	A24FF ; Set colors
2652	CD2E25	1682	CALL	A252E	; "ENTR 2-DIGIT BYTE TO WRITE"
2655	AF	1683	XOR	A	; Get 2 digits
2656	CD7125	1684	CALL	A2571	
2659	E5	1685	PUSH	HL	; Save
265A	7C	1686	LD	A,H	
265B	D3FF	1687	OUT	(DSPLV),R	; Send to display
265D	CDFC25	1688	CALL	A25CF	; Delay
2660	CDFF24	1689	CALL	A24FF	; Clear screen
2663	CD1625	1690	CALL	A2516	; "ENTR 4-DIGIT HEX"
2666	CD1E25	1691	CALL	A251E	; "READ ADDR"
2669	3E01	1692	LD	A,1	; Get 4 digits
266B	CD7125	1693	CALL	A2571	
266E	C1	1694	POP	BC	
266F	70	1695	R266F	LD	(HL),B
2670	7E	1696	LD	A,(HL)	
2671	18FC	1697	JR	R266F	; Loop forever
		1698	;		
		1699	; Special Routine 6	Display All Input Devices	
2673	Cdff24	1700	R2673	CALL	A24FF
2676	21C024	1701	LD	HL,T24C0	; Labels
2679		1702	XVRELL	DE,4,10	
2679	11040R	1703+	LD	DE,10 SHL 8+(4)	
267C	CDFB26	1704	CALL	A26FB	
267F	21D824	1705	LD	HL,T24D8	; Labels
2682		1706	XVRELL	DE,80,0	
2682	115008	1707+	LD	DE,0 SHL 8+(80)	
2685	CDFB26	1708	CALL	A26FB	
2688	08	1709	EX	RF,RF'	
2689	AF	1710	XOR	A	
268A	08	1711	EX	RF,RF'	
268B	211020	1712	LD	HL,T2010	; Set interrupt routine adrs.
268E	7C	1713	LD	A,H	
268F	ED47	1714	LD	I,R	
2691	7D	1715	LD	A,L	
2692	D30D	1716	OUT	(INFBK),R	
2694	3E03	1717	LD	A,3	
2696	D30E	1718	OUT	(INM0D),R	
2698	FB	1719	EI		

2705 D618 1777 SUB 18H ; Reduce 3 char positions
2707 5F 1778 LD E,A
2708 7A 1779 LD A,D ; Get vertical position
2709 C608 1780 ADD A,10 ; Increment by 1 line
270B 57 1781 LD D,A ; (10 pixels)
270C FE5A 1782 CP 98
270E 20EB 1783 JR NZ,R26FB ; Line 80 is last line
2710 C9 1784 RET
1785 ;
1786 ; Display R in ASCII
2711 67 1787 R2711 LD H,A ; Save input value
2712 E6F0 1788 AND 0F0H ; M. S. nibble first
2714 0F 1789 RRCA
2715 0F 1790 RRCA
2716 0F 1791 RRCA
2717 0F 1792 RRCA
2718 CD4625 1793 CALL R2546 ; Convert to ASCII
271B CD3D25 1794 CALL R253D ; Display
271E 7C 1795 LD A,H ; L. S. nibble last
271F E60F 1796 AND 0FH
2721 CD4625 1797 CALL R2546 ; Convert to ASCII
2724 CD3D25 1798 CALL R253D ; Display
2727 C9 1799 RET
1800 ;
1801 ; Interrupt routine for Display All Input Devices
1802 R2728 DI
2729 08 1803 EX AF,AF'
272A A7 1804 AND A
272B 2817 1805 JR Z,R2744
272D 08 1806 EX AF,AF'
272E DB8E 1807 IN A,(VERAF) ; Get vertical Lite Pen
2730 CB3F 1808 SRL A
2732 1809 XVRELL DE,28,10
2732 111C08 1810+ LD DE,10 SHL 8+(28)
2735 CD1127 1811 CALL R2711
2738 DB0F 1812 IN A,(HORAF) ; Get horizontal Lite Pen
2739 D608 1813 SUB 8
273C 1814 XVRELL DE,28,20
273C 111C14 1815+ LD DE,20 SHL 8+(28)
273F CD1127 1816 CALL R2711
2742 FB 1817 R2742 EI
2743 C9 1818 RET
1819 ;
2744 3C 1820 R2744 INC A
2745 08 1821 EX AF,AF'
2746 18FA 1822 JR R2742
1823 ;
1824 ; Special Routine 7 Rainbow Color Display
2748 110048 1825 R2748 LD DE,NORMEM
274B 21A627 1826 LD HL,T27A6
274E 011400 1827 LD BC,20
2751 EDB8 1828 LDIR ; Put up rainbow pattern
2753 210040 1829 LD HL,NORMEM
2756 81DC0F 1830 LD BC,0FDCH
2759 EDB8 1831 LDIR ; Fill rest of screen
2758 211220 1832 LD HL,T2812 ; Set up interrupt adrs
275E 7C 1833 LD A,H

FF

	1893 ;			
	1893 ; Special Routine 8	Enter Machine Code From Keypad		
27BA	C0FF24	1890 R27BA	CALL A24FF	; Set colors.
27BD	C01625	1891	CALL A2516	; "ENTR 4-DIGT HEX"
27C0		1892	SYSSUK	STRDIS
27C0	FF	1893+	RST	39H
27C1	35	1894+	DB	STRDIS+1
27C2	04	1898	DB	4
27C3	32	1899	DB	50
27C4	0C	1900	DB	00001100B
27C5	8824	1901	DW	T248B ; "STRT ADDR"
27C7	3E01	1902	LD	R.1 ; Get 4 digits
27C9	C07125	1903	CALL	A2571
27CC	E5	1904	PUSH	HL ; Save start
27CD	E5	1905	PUSH	HL
27CE	C0CF25	1906	CALL	A25CF
27D1	C0FF24	1907	CALL	A24FF
27D4		1908	SVSSUK	STRDIS
27D4	FF	1909+	RST	39H
27D5	35	1910+	DB	STRDIS+1
27D6	04	1914	DB	4
27D7	28	1915	DB	40
27D8	0C	1916	DB	00001100B
27D9	9524	1917	DW	T2495 ; "ENTR 2-DIGT HEX"
27DB		1918	SVSSUK	STRDIS
27DB	FF	1919+	RST	39H
27DC	35	1920+	DB	STRDIS+1
27DD	04	1924	DB	4
27DE	32	1925	DB	50
27DF	0C	1926	DB	00001100B
27E0	A524	1927	DW	T24A5 ; "DATA"
27E2		1928	SVSSUK	STRDIS
27E2	FF	1929+	RST	39H
27E3	35	1930+	DB	STRDIS+1
27E4	04	1934	DB	4
27E5	58	1935	DB	90
27E6	0C	1936	DB	00001100B
27E7	F324	1937	DW	T24F3 ; "GO" TO RUN
27E9	C0CF25	1938 R27E9	CALL	A25CF ; Delay
27EC	AF	1939	XOR	R ; Get 2 digits
27ED	C07125	1940	CALL	A2571
27F0	78	1941	LD	A,B
27F1	FE18	1942	CP	24
27F3	2003	1943	JR	NZ,R27F8
27F5	E1	1944	POP	HL ; "GO" key
27F6	E1	1945	POP	HL
27F7	E9	1946	JP	(HL)
	1947 ;			
27F8	D1	1948 R27F8	POP	DE
27F9	7C	1949	LD	A,H
27FA	12	1950	LD	(DE),R
27FB	13	1951	INC	DE
27FC	D5	1952	PUSH	DE
27FD	18EA	1953	JR	R27E9
	1954 ;			
27FF	37	1955	DB	37H ; Checksum byte